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REVISIONS TO AN APPROVED SITE PLAN
PLANNER'S TECHNICAL REPORT

15704 East Hwy 12, Rogers, AR 72756

EXECUTIVE SUMMARY

The applicant Tow Mate LLC is an existing business in the Prairie Creek area of Rogers, Arkansas. On April 3, 2013, the application to construct a building for the assembly and shipping of the wireless lights was approved by the Planning Board. As part of the site plan review process, stormwater considerations were reviewed in-depth and the applicant's engineer, Davis Engineering, provided a detailed site drainage report and a hydrology report.

In August 2013, Northwest Arkansas experienced heavy rains which were declared an emergency event. The subject land along with many other properties experienced substantial flooding and the dry creek beds conveyed large volume of fast moving water. Following a site visit conducted by staff on August 8, 2013, and as required by the Planning Board, staff sent a letter dated September 12, 2013 to the applicant requesting verification of engineering studies and analysis to ensure adequacy of Stormwater management on site. During site visit, staff also noted that gravel removed from Bear Creek was stockpiled at the employee parking area located on the north-east part of the site. In addition staff also requested a verification of the final building elevation.

Subsequently, on November 12, 2013, the applicant submitted a drainage report and a revised site plan. Following is a summary of the requested revisions and staff's review:

1. Redesign the Stormwater management measure on the east side of the building by creating a 6 foot wide and 18" deep open drainage channel on the east side of the building and an 18" deep rainwater garden.

2. Raise the employee parking located on the north-east part of the subject land, close to Bear Creek, above the existing grade and provide a 4 feet high wood privacy fence along the west and south sides of the parking area.

At the Technical Advisory Committee meeting held on December 4, 2013, staff offered the following comments. On December 12, 2013, the applicant submitted additional information to address some of the outstanding items:

- Applicant is required to obtain a permit from the Army Corps of Engineer to realign the existing drainage channel.

  Comment: in accordance with the letter dated December 12, 2013, the applicant noted that the Corps of Engineer application has been resubmitted. Comments are awaited.

- Staff has concerns that the cross section indicates the building pad to be higher than the adjacent property to the east; this will cause flooding on the adjacent property. Staff requires that the applicant include existing and proposed grades on the cross section and verify the measures for protection of the adjoining property during a flood event. Provision of a berm may be necessary to prevent flooding. The "as built" elevation of the building is also required to be confirmed.

  Comment: in accordance with the letter dated December 12, 2013, the applicant provided channel analysis including a 24" berm on east side of channel to protect the adjacent property. The requested addition of existing and proposed grades have not been added to the cross sections.

- Provision of rain garden will help in improving the quality of runoff from the parking/loading area. A cross section of the rain garden and Maintenance schedule is required to be included.

  Comment: not included.

- Applicant was requested to provide detailed calculations showing the run off received on-site and the adequacy of the design of the Stormwater management measures, however this information is not available.

  Comment: On December 12, 2013, the applicant provided drainage channel analysis, showing the storm frequency and peak discharge and a hydrograph plot for 50 year storm frequency. It is unclear if the peak discharge takes into account the amount of off site Stormwater run off from the two box culverts and open drainage channels on-site.

- Applicant is required to confirm if the employee parking will be raised 2 feet or 3 feet above the grade. The cross section indicates 3 feet while the text on the site plan indicates 2 feet elevation above the adjacent grade.

  Comment: The revised site plan and cross section submitted on December 12, 2013, indicates that the employee parking will be raised 2fet higher than the surrounding area.

- Applicant indicates that an 18" deep and 2 feet wide swale will be provided at the perimeter of the raised parking area. Based on a review of the overall topography of the area, it is evident that the land is relatively flat and has been subject of flooding in the past. Raising the employee parking area may negatively impact the adjacent property accommodating a house to the south.

  Comment: in accordance with the letter dated December 12, 2013, the applicant noted that, "materials placed on the proposed parking area per plan will be will be removed from the drainage channel therefore no net increase in flood storage area will be incurred. Staff is unclear as the gravel removed from Bear Creek should be removed from the site.

- Applicant is required to submit proof of notification to abutting property owners.

  Comment: in accordance with the letter dated December 12, 2013, the applicant indicated that the notifications have been sent by the due date and they will bring to the next meeting.

PROJECT INFORMATION

Applicant/Owner: Tow Mate LLC

Address of subject property: 15704 East Hwy 12, Rogers, AR 72756

Parcel ID: 18-03384-006

Parcel Size: 3.90 acres

Current Land Use: Building under construction for Tow Mate LLC office

Proposed Revisions: 1. **Redesign the Stormwater management measure** on the east side of the building. Create a 6 foot wide and 18" deep open drainage channel on the east side of the building and an 18" deep rainwater garden. Rain garden with wetland plants are identified on the site plan. A cross section of the drainage channel is also included on the site plan.

2. **Raise the employee parking** located on the north-east part of the subject land, close to Bear Creek, above the existing grade.

Attachments: The following drawings and documents are attached:

1. Location Map- 15704 East Hwy 12, Rogers, AR
2. Proposed Site Plan
3. Applicant's written description of the proposal

PLANNING ANALYSIS

Description of Property and Surrounding Area

The subject property is municipally known as in 15704 East Hwy 12, Rogers and is located outside the corporate limits of City of Rogers in the Prairie Creek area.

The overall land area is 3.90 acres and is currently under construction in accordance with the approved site plan. There is very little existing tree cover on the property. The parcel topography is flat with frontage along Highway 12. Bear Creek runs across the west and northern boundary of the property. A box culvert is located along the south-east property limit that conveys Stormwater from the properties to the south, under the highway. In its undeveloped state, the subject lands provided the overflow area for Stormwater conveyed from the culvert. An open drainage channel exists on the adjacent property to the east that has not been maintained for years. The property is in close proximity to Beaver Lake, thus, acts as a catchment area for a larger offsite Stormwater runoff area. Please see Location Map attached.

In accordance with the Engineer's note on the site plan the property does not lie within a flood zone. The subject land is located within an MS4 stormwater area.

BACKGROUND

On April 3, 2013, the application to construct an 11,124 sq. ft. building for the assembly and shipping of wireless lights was approved on the subject lands. This development is related to the Tow Mate operations in near proximity located at 15827 Serenity Point Lane, Rogers.

As part of the site plan review process, Stormwater considerations were reviewed in-depth and the applicant's engineer, Davis Engineering, provided a detailed site drainage report dated March 12, 2013 and a Hydrology Report dated March 26, 2013. As a Stormwater management measure, a rain garden along the east side of the building was approved that was designed to carry a 100 year storm event. Although staff had expressed their concerns with the stormwater runoff on the property, impact on the adjacent neighbors and the adequacy of the design, the engineering analysis confirmed that the design addressed the Stormwater considerations.

In August 2013, Northwest Arkansas experienced heavy rains which were declared an emergency event. The subject land along with many other properties experienced substantial flooding and Bear Creek and the box culvert conveyed large volume of fast moving water, flooding the subject lands. Following a site visit conducted by staff on August 8, 2013, and as required by the Planning Board, staff sent a letter dated September 12, 2013 to the applicant requesting verification of engineering studies and analysis to ensure adequacy of Stormwater management on site. Further, staff noted that gravel removed from Bear creek was stockpiled at the employee parking area located on the north-east part of the site. Staff also requested a verification of the final building elevation. Subsequently, on November 12, 2013, a drainage report and revised site plan was submitted.

On December 4, 2013, the Planning Board reviewed this matter at TAC. Staff identified few outstanding items as detailed in the report. On December 12, 2013, the applicant submitted a revised site plan, channel report, drainage channel analysis, a hydrograph for 50 year storm event and a written description of the revisions.

TECHNICAL REVIEW OF SITE PLAN

Site Services - Drainage/ Stormwater Management Plan

Required: Applicant is required to indicate on plan storm drainage infrastructure and off-site drainage study. If study indicates an increase in peak flow discharge downstream, the developer shall construct a detention facility or an alternative LID methodology that shall control the peak runoff rate. The County also recommends minimizing impervious surface to limit the need for such facilities.

Comment: Applicant has proposed a revised Stormwater management measure that includes a combination of a rain garden and a drainage channel on the east property line.

Proposed Rain Garden- An 18" deep rainwater garden is proposed with wetland plants that are identified on the site plan. No other details are available. **This item remains outstanding.**

Drainage Channel- a 6 foot wide and 18" deep open drainage channel on the east side of the building is proposed to clearly define the Stormwater runoff. This drainage channel aims to reroute the existing ill-maintained channel on the subject lands. The cross section of the drainage channel indicates the building pad to be higher than the adjacent property to the east; this will cause flooding on the adjacent property. Staff requires that the applicant include existing and proposed grades on the cross section and verify the measures for protection of the adjoining property during a flood event. Provision of a berm may be necessary to prevent the flooding. The "as built" elevation of the building needs to be verified on the site plan.

Applicant is required to submit a revised detailed drainage and hydraulic Study along with a description of the revisions to clarify the changes considered in the revised Stormwater measures and the adequacy of such measures. While staff acknowledges that this area of Prairie Creek does not lie in a FEMA designated floodplain, the subject lands are vulnerable to potential flooding considering its location as a catchment area close to Beaver Lake.

The site does lie within a County MS4 area. Therefore any land disturbance requires a separate stormwater permit.

Parking Buffer

Required: Adjoining incompatible uses should be screened with landscaping, walls, berms, or similar treatments.

Comment: The applicant has proposed a 4 feet high wood privacy fence along the south and west sides of the elevated employee parking area to buffer from the adjacent residential units.

The parking area will be gated and will require ramp access. Applicant is required to confirm the anticipated hours of use of this parking area. The applicant may consider relocating the gated access to the north to prevent potential conflict with the residential driveways to the east and west along Tow Mate Lane.

STAFF'S COMMENTS

- Applicant is required to obtain a permit from the Army Corps of Engineer to realign the existing drainage channel.

  Comment: in accordance with the letter dated December 12, 2013, the applicant noted that the Corps of Engineer application has been resubmitted. Comments are awaited.

- Staff has concerns that the cross section indicates the building pad to be higher than the adjacent property to the east; this will cause flooding on the adjacent property. Staff requires that the applicant include existing and proposed grades on the cross section and verify the measures for protection of the adjoining property during a flood event. Provision of a berm may be necessary to prevent flooding. The "as built" elevation of the building is also required to be confirmed.

  Comment: in accordance with the letter dated December 12, 2013, the applicant provided channel analysis including a 24" berm on east side of channel to protect the adjacent property. The requested addition of existing and proposed grades have not been added to the cross sections.

- Provision of rain garden will help in improving the quality of runoff from the parking/loading area. A cross section of the rain garden and Maintenance schedule is required to be included.

Comment: not included.

- Applicant was requested to provide detailed calculations showing the run off received on-site and the adequacy of the design of the Stormwater management measures, however this information is not available.

  Comment: On December 12, 2013, the applicant provided drainage channel analysis, showing the storm frequency and peak discharge and a hydrograph plot for 50 year storm frequency. It is unclear if the peak discharge takes into account the amount of off site Stormwater run off from the two box culverts and open drainage channels on-site.

- Applicant is required to confirm if the employee parking will be raised 2 feet or 3 feet above the grade. The cross section indicates 3 feet while the text on the site plan indicates 2 feet elevation above the adjacent grade.

  Comment: The revised site plan and cross section submitted on December 12, 2013, indicates that the employee parking will be raised 2fet higher than the surrounding area.

- Applicant indicates that an 18" deep and 2 feet wide swale will be provided at the perimeter of the raised parking area. Based on a review of the overall topography of the area, it is evident that the land is relatively flat and has been subject of flooding in the past. Raising the employee parking area may negatively impact the adjacent property accommodating a house to the south.

  Comment: in accordance with the letter dated December 12, 2013, the applicant noted that, "materials placed on the proposed parking area per plan will be will be removed from the drainage channel therefore no net increase in flood storage area will be incurred. Staff is unclear as the gravel removed from Bear Creek should be removed from the site.

- Applicant is required to submit proof of notification to abutting property owners.

Comment: in accordance with the letter dated December 12, 2013, the applicant indicated that the notifications have been sent by the due date and they will bring to the next meeting.

CONCLUSION

The applicant aims to address the on-going Stormwater and flooding issue on-site. While the proposed development in itself does not create substantial run offs, the site receives substantial off run off due to its location on the lower elevation, few feet away from Beaver Lake. As evidenced during a recent flood event in August, Stormwater management is an essential aspect of the development which requires detailed engineering analysis. The proposed redesign of the Stormwater management measure on the east side incorporates a combination of a 6 foot wide and 18" deep open drainage channel and an 18" deep rainwater garden is supplemented with the drainage channel analysis and a hydrograph. The cross section indicates the provision of a 48" (4feet) earthen berm along the east side of the drainage channel to protect the adjoining property to the east. Applicant is request to confirm the surfacing of the channel, i.e. will it be seeded to prevent future erosion and sedimentation?

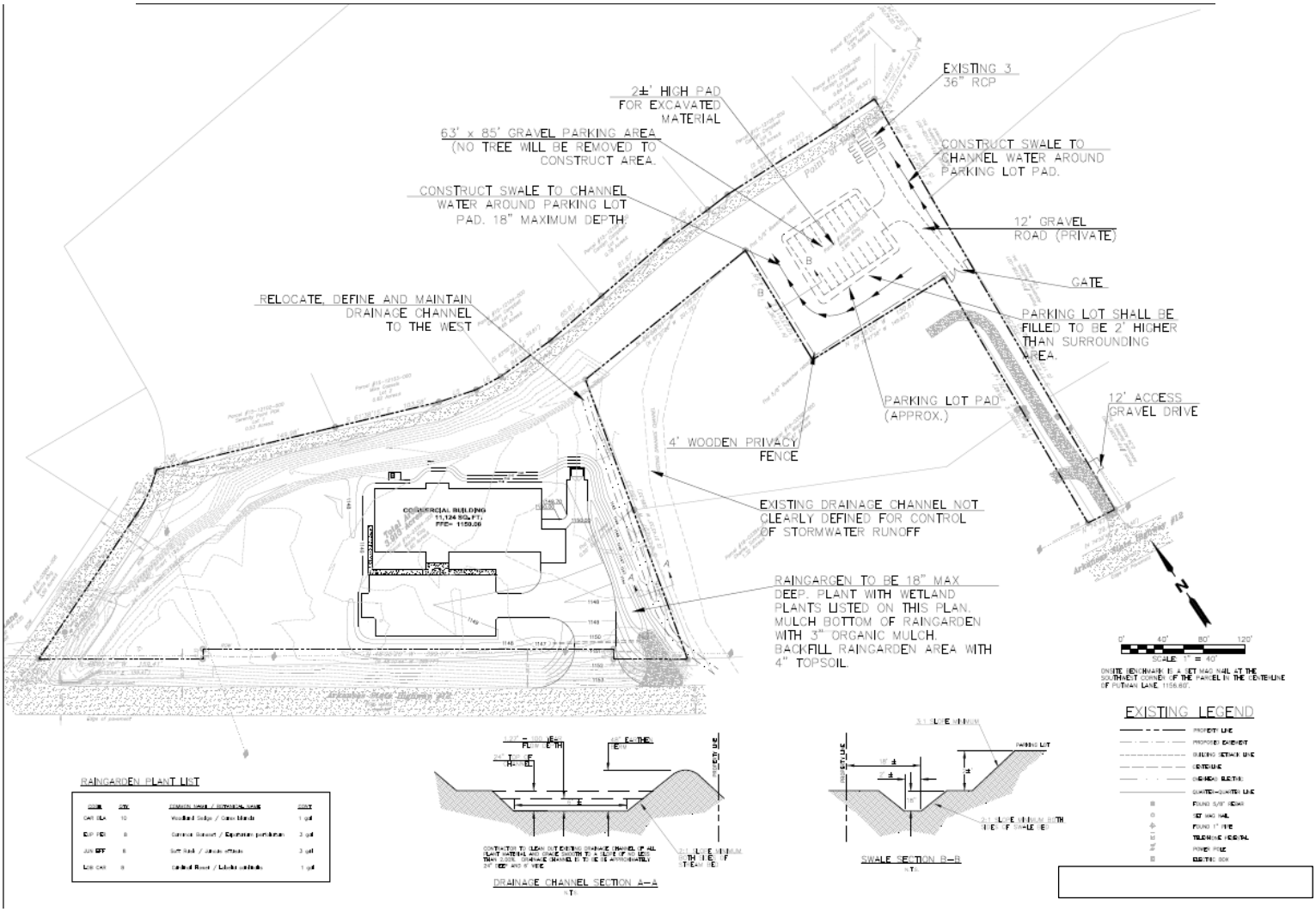
Staff remains concerned with the proposal to raise the employee parking located on the north-east part of the subject land, close to Bear Creek, above the existing grade. Based on numerous site visits conducted during dry and wet weather conditions staff has witnessed the water flow on site. Considering that this area receives water from the surrounding area and facilitates its release to abutting Bear Creek, any grade change may cause potential negative impact to the property to the south.

Any updates from the Army Corps of Engineers for re-routing the open drainage channel needs to be provided. A permit from the Army Corps of Engineer will be required. Further, applicant is required to provide proof of notification to the abutting property owners.

The Planning Board may consider the following stipulations in their decision in addition to the existing stipulations:

1. The applicant agrees to provide a written statement signed and certified by a Professional Engineer in Arkansas accompanying the hydrograph and the channel design analysis to confirm the adequacy of the proposed Stormwater measure on-site and that these measures will not negatively impact the surrounding property owners.
2. That the owner agrees to implement and monitor the ongoing maintenance schedule for the rain garden and the Stormwater drainage on-site;
3. That the owner agrees to maintain the proposed earthen berm along the east property line in order to prevent the flooding on the adjacent property;
4. That the applicant agrees to obtain the 404 Clean water permit from the Army Corps of Engineers prior to the issuance of a construction permit or any site disturbance;
5. That the applicant agrees to obtain a Stormwater permit for any land disturbance on-site prior to the issuance of a construction permit;

LOCATION MAP - 15704 East Hwy 12, Rogers, AR 72756



REVISED OVERALL SITE PLAN –December 12, 2013

TOWMATE
REPORT ON
REVISIONS TO APPROVED GRADING/DRAINAGE PLAN
NOVEMBER 2013

During construction of the approved project it has been determined by the Owner, Engineer and County Planning that certain revisions would help improve the current drainage situation at this site. Currently stormwater that passes beneath Hwy 12 through an existing box culvert flows onto the Towmate property as well as property to the east. The drainage channel to the east property has not been maintained through the years. It is wooded and during major rain events the water sheet flows onto both properties before reaching the Bear creek to the north of both properties.

The Owner proposes to define this channel conveyance. To do this the channel would need to be relocated onto the Towmate site per the revised plan. This would allow the Towmate Owner to maintain the channel. The Owner will provide a berm on the east side of the proposed channel to help protect the adjacent property owner to the east from the channelized stormwater runoff. This work would vastly improve drainage capabilities at the site.

The Owner proposes to 'waste' the excavated material from the proposed channel onto a previously designated employee parking area on the northeast corner of Owner's property. This area will be approximately 2'-3' high with gravel excavated from the proposed channel. Drainage swales will be constructed around this fill area to route stormwater to Bear Creek.

The Owner has installed 3-36" culverts under Bear Creek for an approved creek crossing (by the Army COE). These have become plugged during a recent major rainfall event. The Owner is aware of this and will be cognizant to prevent debris and sediment from clogging these culverts to prevent conveyance along Bear Creek to Beaver Lake.

Gary A. Davis, P.E.